

What is claimed is:

1. A float glass chamber comprising:
a hot section having an atmosphere in at least the lower plenum comprises
5 less than 3 percent hydrogen based on volume; and
a cold section, wherein the boundary line between the hot section and the
cold section is where the temperature of the glass falls below a threshold
temperature.
- 10 2. A float chamber according to claim 1 wherein the threshold temperature of the
chamber is 1600°F.
3. A float chamber according to claim 1 wherein the threshold temperature of the
float chamber is 1800°F.
- 15 4. A float chamber according to claim 1 wherein the threshold temperature of the
float chamber is 2100°F.
5. A float chamber according to claim 1 wherein the atmosphere in at least the
20 lower plenum of the cold section comprises up to 10 percent of hydrogen based on
volume.
6. A float chamber comprising:
a hot section having an atmosphere in at least the lower plenum comprises
25 less than 3 percent hydrogen based on volume; and
a cold section, wherein the boundary line between the hot section and the
cold section is where the temperature of the glass falls below a threshold
temperature of greater than 1600°F.
- 30 7. A float chamber according to claim 6 wherein the atmosphere in at least the
lower plenum of the cold section comprises up to 10 percent of hydrogen based on
volume.
8. A method for making float glass with reduced defect density comprising:
35 a. melting a glass composition to form a glass melt; and

b. pouring the glass melt in a float chamber having a hot section and an cold section, the boundary line between the hot section and the cold section is where the temperature of the glass falls below a threshold temperature, wherein the hot section has an atmosphere in at least the lower plenum comprises
5 less than 3 percent hydrogen based on volume

9. A method according to claim 8 wherein the threshold temperature of the float chamber is 1600°F.

10 10. A method according to claim 8 wherein the threshold temperature of the float chamber is 1800°F.

11. A method according to claim 8 wherein the threshold temperature of the float chamber is 2100°F.

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12. A method according to claim 8 wherein the atmosphere in at least the lower plenum of the cold section comprises up to 10 percent of hydrogen based on volume

13. A method according to claim 8 wherein the glass melt has a water content
20 equal to or greater than 0.035 weight percent based on the total weight percent of the composition.

14. A method according to claim 8 wherein the float glass produced comprises at least one piece of glass in a laminated product.

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15. A method according to claim 14 wherein the laminated product is a windshield.

16. A method for making float glass with reduced defect density comprising:

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- a. melting a glass composition to form a glass melt; and
- b. pouring the glass melt into a float chamber having a hot section and an cold

section, the boundary line between the hot section and the cold section is where the temperature of the glass falls below a threshold temperature;

c. pumping a gas mixture comprising less than 3% hydrogen based on volume into at least the lower plenum of the hot section.

17. A method according to claim 16 wherein the pumping comprises pumping a
5 gas mixture comprising less than 1% hydrogen based on volume into at least the lower plenum of the hot section.

18. A method according to claim 16 wherein the glass composition comprises:
from 65 to 75 weight percent SiO_2 ;
10 from 10 to 20 weight percent Na_2O ;
from 5 to 15 weight percent CaO ;
from 0 to 5 weight percent MgO ;
from 0 to 5 weight percent Al_2O_3 ;
from 0 to 5 weight percent K_2O ; and
15 from 0 to 2 weight percent Fe_2O_3 ,
with weight percents being based on the total weight of the glass composition.

19. A method according to claim 16 wherein the melting occurs in an oxy-fuel furnace.